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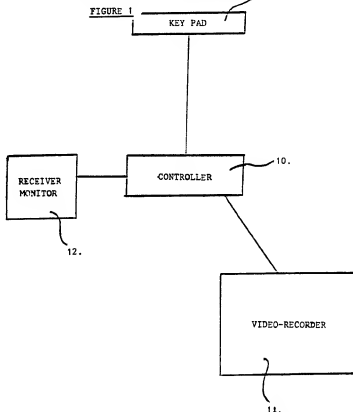
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INT CL<sup>4</sup> H04N

(54) **Selective recording using transmitted programme information**

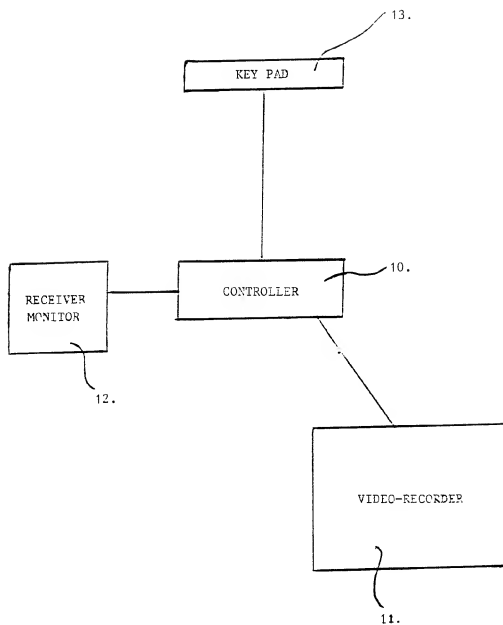
(57) A controller 10 controls the activation and de-activation of a video recorder 11 subject to transmitted information about programme material, which information is received by a receiver monitor means 12, and subject to information input by a user via the key pad 13. The receiver monitor means continuously scans all the television channels and, by comparing the information about the next programme to be transmitted with input information stored in the memory, the receiver/monitor may register e.g. that golf due to begin in two minutes on BBC1, is to be recorded.



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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FIGURE 1

SELECTIVE RECORDING

The present invention relates to recording and is concerned particularly although not exclusively with a device for and method of selectively recording broadcast television or radio programmes.

The recording of television programmes using domestic video recorders is common practice in many of today's homes. A recorder may be left to turn on at a prearranged time and record programmes from one or more T.V. channels before turning off at another prearranged time.

Unfortunately, changes to the published times of transmission of programmes often result in part or all of the desired programme being missed by the recording. For example when a live broadcast precedes a film which the user wishes to record and the live broadcast continues for longer than was originally scheduled, the recording may begin during the undesired live broadcast and, because of the late start to the film, the recording may finish before the end of the film.

According to a first aspect of the present invention apparatus for the control of a recorder comprises input means arranged to permit a user to input information which identifies programme material to be recorded, receiver/monitor means arranged to receive and monitor transmitted information about programme material that is currently being broadcast, and control means arranged to control the activation and deactivation of a recorder in response to both the monitored information and the input information, so as to record programme material identified in advance by the user and confirmed

during broadcast by the monitored information.

The transmitted information may be transmitted with the programme material.

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Preferably, the receiver/monitor means includes a scanning means arranged to scan different broadcast channels or stations.

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The transmitted information may include the name of the programme being currently broadcast. Alternatively or additionally, the transmitted information may include the category of the programme being currently broadcast.

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The transmitted information may include the length of time for which a currently broadcast programme has been running. Alternatively or additionally the transmitted information may include an indication of the time left before a programme is to begin. The transmitted information may include the length of time which a currently broadcast programme has left to run. The transmitted information may include a schedule of programmes.

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The apparatus may include a microprocessor.

The input means may include a keypad.

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The input means may include a bar code reader which reads bar codes containing information about programme material.

The user may input information which identifies a selection of programmes or types of programmes or a

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combination thereof and the receiver/monitor means may receive and monitor transmitted information about the programme material as it is being broadcast, the control means causing the video recorder to commence recording  
5 when the receiver/monitor means receives information that programme material selected by the user is being or is about to be broadcast.

The programme material may comprise television  
10 programme material.

The programme material may comprise radio programme material.

15 The transmitted information may comprise a continuous signal.

The transmitted information may be transmitted at or near the start of a programme and/or at or near the  
20 end of a programme.

The transmission of the transmitted information may be intermittent.

25 The transmitted information may comprise a multiplexed signal.

The input information may include a hierarchy of preference of programme material to be recorded.  
30

According to a second aspect of the present invention a method of controlling a recorder comprises inputting information which identifies programme material to be recorded into an input means, receiving and  
35 monitoring transmitted information about programme

material that is currently being broadcast and controlling the activation and deactivation of a recorder in response to both the monitored information and the input information so as to record programme material  
5 identified in advance by a user and confirmed during broadcast by the monitored information.

The method may include receiving and monitoring transmitted information which is transmitted with the  
10 programme material.

The method may include scanning different broadcast channels or stations.

15 The method may include receiving and monitoring transmitted information which information includes the name of the programme being currently broadcast. Alternatively or additionally, the method may include receiving and monitoring transmitted information which  
20 information includes the category of the programme being currently broadcast.

The method may include receiving and monitoring transmitted information which information includes the  
25 length of time for which a currently broadcast programme has been running or the length of time which it has left to run.

The method may include receiving and monitoring  
30 transmitted information which information includes the time at which a programme is due to begin. Alternatively or additionally, the method may include receiving and monitoring transmitted information which information includes a schedule of programmes.

The method of inputting the information identifying programme material may comprise using a key pad.

5           The method of inputting information which identifies programme material may include reading bar codes containing information about programme material with a bar code reader.

10           The invention also includes a video recorder when used with control apparatus in accordance with the first aspect of the invention.

15           A specific embodiment of the present invention will now be described by way of example only and with reference to the accompanying drawing, in which Figure 1 represents, schematically, a system for controlling a video recorder.

20           A controller 10 controls the activation and deactivation of a video recorder 11 subject to received information about programme material received by the receiver/monitor means 12 and subject to the information input by a user into the key pad 13.

25           For example, the user may wish to record a programme entitled "Golf World" and the name of the programme or a code identifying the programme is input into the controller via the key pad 13. Alternatively  
30 this could be read into the controller in the form of bar codes using a bar-code reader.

          The scheduled time for the programme is say, 11.15am till 12.30pm but the golf is preceded by cricket  
35 which overruns its scheduled programme time.

Simultaneously, with each broadcast, information may be transmitted which identifies the programme being transmitted, identifies the programme scheduled to be transmitted next, the channel on which it will be shown, 5 the length of time which the current programme has been running and the length of time which it is expected to continue, as well as other information such as the type or category of programme being currently transmitted and whether there is a temporary pause for the transmission 10 of commercial advertisements.

The receiver/monitor may continuously scan all the channels. By comparing the information about the next programme to be transmitted with the input 15 information stored in the memory the receiver/monitor may register that golf, due to begin in two minutes on BBC1, is a desired recording. The controller may check that a cassette is loaded in the cassette mechanism and, in the event that there is not a cassette loaded a warning may 20 flash on the machine's display. If the user is in the vicinity of the recorder then he will become aware of the absence of a cassette and may be able to remedy this.

Assuming that a cassette has been loaded, the 25 controller may activate the recorder just before the commencement of the golf. The receiver/monitor may continue to monitor the information transmitted and, since the receiver/monitor will have information about the length of time the golf has to run, the controller 30 may check the length of cassette tape left on which to record and may flash a suitable warning on the display if there is an insufficient length of tape to complete the recording.

The user can input instructions to record any broadcast which has the identifying code of golf, or if desired the identifying code of sport in general.

5       Also, if the user has several preferred types of programme or specific programmes but has no knowledge of published programme schedules he can input instructions to record programmes according to a hierarchy of preference, for example in the above case golf might be  
10 recorded but only if football is not being currently transmitted. This system may include a facility whereby the recording of certain types of programme is not interrupted, even though the transmission of a more desirable type of programme has commenced on another  
15 channel. For example, if a film is currently being recorded on one channel and halfway through the film a golf programme begins on another channel, the controller can be instructed to continue with the recording of the film even though golf may be in a superior position in  
20 the programme hierarchy. This would avoid partial recordings which, in the case of a film, may be undesirable.

25       The arrangement greatly reduces the risk that a variation from the published time of transmission results in the recorder failing to record all or part of a desired programme.

30       In addition, the arrangement provides a very flexible system of video recording which may be tailored to the needs of an individual. For example, it is possible to include instructions to pause recording when commercial advertisements are being transmitted, if these are undesirable.

Although the specific embodiment herein described relates to a video recorder and its control, it will be appreciated that a television or similar appliance could also be controlled by a device embodying the present invention.

The relevant information about programme material may be transmitted with the programme material (for example - in the form of a teletext transmission), although the transmitted information could be transmitted by some other medium - for example, radio, cable, telephone link, etc.

Reception of the transmitted information about programme material could be contingent on subscription to a particular authority or private broadcaster, and it is envisaged that suitable encoding/decoding techniques would be employed in this instance.

The reader's attention is directed to all papers and documents which are filed concurrently with or previous to this specification and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

Each feature disclosed in this specification (including any accompanying claims, abstract and drawings), may be replaced by alternative features

serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

The invention is not restricted to the details of the foregoing embodiment(s). The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

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CLAIMS

1. Apparatus for the control of a recorder  
5 comprising input means arranged to permit a user to input  
information which identifies programme material to be  
recorded, receiver/monitor means arranged to receive and  
monitor transmitted information about programme material  
10 that is currently being broadcast, and control means  
arranged to control the activation and de-activation of a  
recorder in response to both the monitored information  
and the input information, so as to record programme  
material identified in advance by the user and confirmed  
during broadcast by the monitored information.  
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2. Apparatus as claimed in Claim 1, wherein the  
transmitted information is transmitted with the programme  
material.
- 20 3. Apparatus as claimed in Claim 1 or Claim 2,  
wherein the receiver/monitor means includes a scanning  
means arranged to scan different broadcasts channels or  
stations.
- 25 4. Apparatus as claimed in any of the Claims 1 to 3,  
wherein the transmitted information includes the name of  
the programme being currently broadcast.
5. Apparatus as claimed in any of the Claims 1 to 4,  
30 wherein the transmitted information includes the category  
of the programme being currently broadcast.
6. Apparatus as claimed in any of the Claims 1 to 5,  
wherein the transmitted information includes the length  
35 of time for which a currently broadcast programme has

been running.

7. Apparatus as claimed in any of the Claims 1 to 6,  
wherein the transmitted information includes an  
5 indication of the time left before a programme is to  
begin.

8. Apparatus as claimed in any of the Claims 1 to 7,  
wherein the transmitted information includes the length  
10 of time which a currently broadcast programme has left to  
run.

9. Apparatus as claimed in any of the Claims 1 to 8,  
wherein the transmitted information includes a schedule  
15 of programmes.

10. Apparatus as claimed in any of the Claims 1 to 9,  
including a microprocessor.

20 11. Apparatus as claimed in any of the Claims 1 to  
10, wherein the input means includes a keypad.

12. Apparatus as claimed in any of the Claims 1 to  
10, wherein the input means includes a bar code reader  
25 which reads bar codes containing information about  
programme material.

13. Apparatus as claimed in any of the Claims 1 to  
12, wherein the user inputs information which identifies  
30 a selection of programmes or types of programmes or a  
combination thereof and the receiver/monitor means  
receives and monitors transmitted information about the  
programme material as it is being broadcast, the control  
means causing the video recorder to commence recording  
35 when the receiver/monitor means receives information that

the programme material selected by the user is being or is about to be broadcast.

14. Apparatus as claimed in any of the Claims 1 to 5 13, wherein the programme material comprises television material.

15. Apparatus as claimed in any of the Claims 1 to 14, wherein the programme material comprises radio 10 programme material.

16. Apparatus as claimed in any of the Claims 1 to 15, wherein the transmitted information comprises a continuous signal.

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17. Apparatus as claimed in any of the Claims 1 to 16, wherein the transmitted information is transmitted at or near the start of a programme and/or at or near the end of a programme.

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18. Apparatus as claimed in any of the Claims 1 to 17, wherein the transmission of the transmitted information is intermittent.

25 19. Apparatus as claimed in any of the Claims 1 to 18, wherein the transmitted information comprises a multiplexed signal.

20. Apparatus as claimed in any of the Claims 1 to 30 19, wherein the input information includes a hierarchy of preference of programme material to be recorded.

21. A method of controlling a recorder comprising input information which identifies programme material to 35 be recorded into an input means, receiving and monitoring

transmitted information about programme material that is currently being broadcast and controlling the activation and de-activation of a recorder in response to both monitored information and the input of the information so  
5 as to record programme material identified in advance by a user and confirmed during broadcast by the monitored information.

22. A method as claimed in Claim 21, which includes  
10 receiving and monitoring transmitted information which is transmitted with the programme material.

23. A method as claimed in Claims 21 or 22, which includes scanning different broadcast channels or  
15 stations.

24. A method as claimed in any of the Claims 21 to 23, including receiving and monitoring transmitted information which information includes the name of the  
20 programme being currently broadcast.

25. A method as claimed in any of the Claims 21 to 24, which includes receiving and monitoring transmitted information which information includes the category of  
25 the programme being currently transmitted.

26. A method as claimed in any of the Claims 21 to 25, which includes receiving and monitoring transmitted information which information includes the length of time  
30 for which is currently broadcast programme has been running or the length of time which it has left to run.

27. A method as claimed in any of the Claims 21 to 26, which includes receiving and monitoring transmitted  
35 information which information includes the time at which

the programme is due to begin.

28. A method as claimed in any of the Claims 21 to 27, which includes receiving and monitoring transmitted  
5 information which information includes a schedule of programmes.

29. A method as claimed in any of the Claims 21 to 28, in which the method of inputting the information  
10 identifying programme material comprises using a key pad.

30. A method as claimed in any of the Claims 21 to 28, wherein the method of inputting information which identifies programme material includes reading bar codes  
15 containing information about programme material with a bar code reader.

31. Apparatus substantially as hereinbefore described with reference to the accompanying drawing.  
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32. A method substantially as hereinbefore described with reference to the accompanying drawing.

33. A video recorder when used with control apparatus  
25 according to any of the preceding claims.

34. A video recorder when used in a method according to any of the preceding claims.

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